Note on the *Phyllosoma* Stage of *Ibacus Peronii*, Leach.

By William A. Haswell, M.A., B.Sc.

I have had the opportunity lately of examining a specimen of a glass-crab or Phyllosoma, which seems to be the young of the highly specialised macrourous decapod *Ibacus Peronii*, and, as it is somewhat rare to obtain these larvæ at the stage when—though still essentially Phyllosomæ—they shew unmistakeably to what species they belong, it is perhaps worthy of notice and description.

The specimen, (which was obtained in Port Jackson and is in Mr. Macleay's Collection) is thirteen lines in length and eight in greatest breadth. Its cephalic shield is of quadrilateral form, with the angles rounded off; anteriorly it presents a deep, broad, mesial excavation at the bottom of which the anterior cephalic appendages are inserted, its antero-lateral angles reaching as far forward as the penultimate joint of the peduncle of the internal antennæ; posteriorly it is terminated by a concave edge. Its dorsal surface is covered with a number of somewhat irregular radiating rugæ, has a deep longitudinal mesial depression along the centre of which runs an irregular ridge, and presents on each lateral half, about midway between the lateral margin and the middle line, a sinuous ridge terminating anteriorly in a flattened triangular-pointed process situated immediately behind and external to the base of the outer antennæ. This shield has still an essentially larval character; it approximates, however, towards that of the adult in the possession of the three ridges above mentioned. The eye-peduncles are very long; the second joint and the eye itself are compressed. The antennules equal the eyes in length; the segments of their peduncle are subequal; the outer flagellum is stouter and somewhat shorter than the inner, which is about half as long as the peduncle.

It is in the structure of the antennæ that this form shews its parentage most unmistakeably. These organs, as in *Ibacus* and the rest of the *Scyllarina*, have the first segment coalescent with the sternum of the antennary somite; on its ventral surface is a perforated tubercle representing the so-called "green-gland" of the adult; the second segment is short and broad; the third has a basal part, of similar form to the second seg ment, and armed internally with a strong, curved, pointed spine, and an external expanded foliaceous portion, of oval pointed form, and armed along its outer border with three small teeth; the fourth segment resembles the basal portion of the third, and has a similar spine on its inner surface; the terminal segment is phylloid, oval, pointed, armed on its inner border with four strong, triangular, pointed teeth and on its outer with a single obscure denticle. The structure of the antennæ in *Ibacus* is almost precisely similar to this, save that the form of the phylloid expansions is somewhat altered, and the number of teeth on them increased.

The labrum is large and prominent. The mandibles are still membranous. The first maxillæ have the exopodite rather longer than the endopodite, and both armed with several setæ, which are longer on the latter. The second maxillæ are large and foliaceous; the endopodite is a simple, blunt process, with a crenated internal border; the scaphognathite is large, the exopodial portion which is slightly truncate anteriorly, is twice as long as the endopodite; the epipodial part is shorter than the exopodite, broad and rounded. The first maxillipedes are rudimentary consisting of a short process to which three branchial (?) filaments are attached. The maxillipedes of the second pair consist of four segments; their extremity reaches the front of the labrum; the appendage on their second segment is short. The third pair of maxillipedes, which have five articulations, are about five times as long as the second; their appendage is about equal in length to that of the latter.

The thoracic shield is rather longer than broad, and excavated posteriorly. The last pair of thoracic limbs are about two-thirds of the length of the penultimate pair, and provided with a well-developed dactylos.

The abdomen nearly equals the thorax in length; the transverse diameter of its segments is about three times the antero-posterior, the former diminishing slightly posteriorly; the abdominal segments (as also the last segment of the thorax) have each, as in *Ibacus*, a mesial dorsal carina ending on the posterior border in a small conical tooth; the pleura are very prominent, and resemble those of the adult; but they are more strongly curved backwards; those of the penultimate segment have two triangular teeth (represented in *Ibacus Peronii)* on their posterior border. The abdominal appendages have both rami slender and tapering; the endopodite has a small, tooth-like internal process. The form of the telson agrees precisely with that of the corresponding structure in *Ibacus Peronii*.

It is not unlikely that the *Phyllosoma Duperreyi* of *Güerin*, (*Voyage de Duperrey, Zool.*, t. II., p. 2, p. 46; pl. 5, fig. 2; *Mag. d'Ent.*, 1830, 4 me. *livraison, pl.* 12), which, like the present form was obtained in Port Jackson, may be an earlier stage in the development of the same animal—the antennæ and abdomen being less highly specialised.

On some new Australian Echini.

By the Rev. J. E. Tenison-Woods, F.L.S., F.G.S., &c., *Pres. Lin. Soc., N.S.W.*

[Plates XIII.-XIV.]

The following species were collected between Port Jackson and Moreton Bay. They are new and extremely interesting, but the observations I have to make on each I will reserve for the end